

WHAT IS CLAIMED IS:

1. A voice interactive system comprising:

a voice information input part for inputting user's voice information  
5 from a user terminal;

a voice recognition part for conducting voice recognition with respect  
to the voice information, and analyzing contents of the voice information;

a voice information mediation part for controlling a transmission path  
of the voice information in accordance with the contents of the voice  
10 information;

an interaction engine for extracting contents of a response  
corresponding to the voice information by referring to a knowledge database,  
and creating a synthesized voice in accordance with the contents of a  
response; and

15 a voice information output part for outputting the synthesized voice,  
wherein the voice information mediation part monitors at all times  
whether or not the user's interaction is being smoothly conducted, and in a  
case of determining that the user's interaction is not being smoothly  
conducted, allows a third-party user to participate in interaction between the  
20 user and the interaction engine from another terminal as a helper.

2. A voice interactive system according to claim 1, wherein the voice  
information mediation part determines whether or not the user's interaction  
is being smoothly conducted based on whether or not an accumulation value of  
25 the number of times at which the contents of a response are not found in the  
knowledge database exceeds a set limit number, and in a case where the  
accumulation value exceeds the set limit number, allows a third-party user to  
participate in the interaction between the user and the interaction engine  
from another terminal as a helper.

3. A voice interactive system according to claim 1, wherein the voice  
information mediation part determines whether or not the user's interaction

is being smoothly conducted based on an average reaction time from a response of the interaction engine to a reaction of the user, and in a case where the average reaction time exceeds a first threshold value or in a case where the average reaction time is below a second threshold value, allows a third-party user to participate in the interaction between the user and the interaction engine from another terminal as a helper.

4. A voice interactive system according to claim 1, wherein the voice information mediation part determines whether or not the user's interaction is being smoothly conducted based on an evaluation value of average sound quality of the voice information input by the user, and in a case where the evaluation value of average sound quality exceeds a first threshold value or in a case where the evaluation value of average sound quality is below a second threshold value, allows a third-party user to participate in the interaction between the user and the interaction engine from another terminal as a helper.

5. A voice interactive system according to claim 1, wherein the voice information mediation part determines a progress of interaction in accordance with an interaction time from a beginning of the user's interaction and the number of accesses to the interaction engine, and a participation form of the third-party user is successively changed, in an increasing order of the progress of interaction, from involvement in which the contents of interaction with the user is displayed to the third-party user and the contents of interaction is updated by the third-party user, parallel input in which the third-party user conducts an input in parallel with the user, to switching in which the third-party user directly interacts with the user.

6. A voice interactive system according to claim 1, wherein the interaction engine further includes an interaction history information storage part for recording interaction history on a user basis, and a helper selection part for selecting the third-party user that is considered to be most familiar with the

contents of the interaction from the interaction history as a helper, and the helper most appropriate for contents of the voice information is selected.

7. A voice interactive system according to claim 1, further comprising a help request notification part for, in a case where the voice information mediation part determines that the user's interaction is not being smoothly conducted, notifying a third-party helper user of such a fact,

wherein in a case where the help request notification part notifies the third-party helper user of the fact that the user's interaction is not being smoothly conducted, the third-party helper user is capable of voluntarily interacting with the user, and in a case where it is detected that only a voice of the third-party helper user continues for a predetermined period of time or longer in interaction between the third-party helper user and the user, the interaction engine interacts only with the third-party helper user.

8. A voice interactive system according to claim 1, further comprising an interaction history display part for displaying the interaction history stored in the interaction history information storage part to a third-party helper user, and a helper instruction part for receiving a help instruction from the third-party helper user,

wherein when the help instruction part receives the help instruction from the third-party helper user, the voice information mediation part enables the interaction between the third-party helper user and the user to be conducted, and when a degree of help of the third-party helper user exceeds a predetermined threshold value in interaction between the third-party helper user and the user, the interaction engine interacts only with the third-party helper user.

9. A voice interactive method comprising:

inputting user's voice information from a user terminal;  
conducting voice recognition with respect to the voice information, and analyzing contents of the voice information;

controlling a transmission path of the voice information in accordance with the contents of the voice information; and

outputting a synthesized voice,

in the controlling of a transmission path of the voice information,  
5 contents of a response corresponding to the voice information being extracted by referring to a knowledge database, and a synthesized voice being created in accordance with the contents of a response,

wherein in the controlling of a transmission path of the voice information, it is monitored at all times whether or not the user's interaction  
10 is being smoothly conducted, and in a case where it is determined that the user's interaction is not being smoothly conducted, a third-party user is allowed to participate in interaction between the user and the interaction engine from another terminal as a helper.

15 10. A program to be executed by a computer, comprising:

inputting user's voice information;

conducting voice recognition with respect to the voice information, and analyzing contents of the voice information;

controlling a transmission path of the voice information in accordance  
20 with the contents of the voice information; and

outputting a synthesized voice,

in the controlling of a transmission path of the voice information,  
contents of a response corresponding to the voice information being extracted by referring to a knowledge database, and a synthesized voice being created in  
25 accordance with the contents of a response,

wherein in the controlling of a transmission path of the voice information, it is monitored at all times whether or not the user's interaction is being smoothly conducted, and in a case where it is determined that the user's interaction is not being smoothly conducted, a third-party user is  
30 allowed to participate in interaction between the user and the interaction engine from another terminal as a helper.